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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,558	09/17/2001	Mark Greenberg	04259P050	9815

7590

01/14/2004

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EXAMINER

BAKER, STEPHEN M

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 01/14/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

22

Office Action Summary

Application No.

09/955,558

Applicant(s)

GREENBERG ET AL.

Examiner

Stephen M. Baker

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-25 is/are allowed.
- 6) ☒ Claim(s) 1-12 and 26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-7, 9 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1: "adding a normalization amount" is considered to be confusing, as the disclosure describes normalization as "subtracting", and apparently should read as "subtracting a normalization amount". It is here noted that the specification's mention of saturating a metric by increasing it to a maximum value is apparently described as being performed only upon individual metrics surpassing a threshold, not upon all metrics at once.

In claim 9: the limitation of "subtracting a normalization amount from branch metric values" is seen as being inconsistent with claim 8's limitation of "subtracting a normalization amount from each of the state metric values, which apparently pertains to a separate embodiment; "said normalized branch metric values combined with said state metric values" appears to be elliptical.

In claim 26: "as in claim 18" apparently should be "as in claim 25".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 8, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,349,608 to Graham *et al* (hereafter Graham).

Graham discloses a Viterbi decoder with path metric (*i.e.* state metric) metric (re)normalization. As shown in Fig. 5 and described by Graham (col. 2, lines 8-15, col. 3 line 67 to col. 4, line 30), when the MSBs of all survivor path metrics are "1", a "specified normalization condition is met", equivalent to establishing a threshold value of 31. In response to the "specified normalization condition" in Graham's decoder, a "normalization amount" equal to 32 is subtracted from all survivor path (state) metrics by resetting the MSBs.

5. Claims 8, 9, 11 and 12 are rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent No. 6,148,043 to Fujimoto (hereafter Fujimoto).

Fujimoto discloses a Viterbi decoder with path metric (*i.e.* state metric) metric (re)normalization. As described by Fujimoto (col. 12, lines 6-50), when all survivor path metrics exceed 0 (are positive), a "specified normalization condition is met". equivalent to establishing a threshold value of 0. In response to the "specified normalization

Art Unit: 2133

condition" in Graham's decoder, a "normalization amount" equal to $\frac{1}{4}$ the maximum representable metric value is subtracted from all survivor path (state) metrics.

6. Claims 8, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by the published article to Choi *et al* (hereafter Choi).

Choi discloses a Viterbi decoder with path metric (*i.e.* state metric) metric (re)normalization. As shown and described by Choi, when the MSBs of all survivor path metrics are "1", a "specified normalization condition is met". In response to the "specified normalization condition" in Choi's decoder, a "normalization amount" is subtracted from all survivor path (state) metrics by resetting the MSBs.

7. Claims 8, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by the 1990 published article to Bree *et al* (hereafter Bree).

Bree discloses a Viterbi decoder with path metric (*i.e.* state metric) metric (re)normalization. As shown and described by Bree, when the MSBs of all survivor path metrics are "1", a "specified normalization condition is met". In response to the "specified normalization condition" in Bree's decoder, a "normalization amount" is subtracted from all survivor path (state) metrics by resetting the MSBs.

8. Claims 8, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by the 1988 published article to Bree *et al* (hereafter Bree '88).

Bree discloses a Viterbi decoder with path metric (*i.e.* state metric) metric (re)normalization. As shown and described by Bree '88, when the MSBs of all survivor path metrics are "1", a "specified normalization condition is met". In response to the

Art Unit: 2133

"specified normalization condition" in Bree '88's decoder, a "normalization amount" is subtracted from all survivor path (state) metrics by resetting the MSBs.

9. Claims 8, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by the published article to Biver *et al* (hereafter Biver).

Biver discloses a Viterbi decoder with path metric (*i.e.* state metric) metric (re)normalization. As shown and described by Biver, when the MSBs of all survivor path metrics are "1", a "specified normalization condition is met". In response to the "specified normalization condition" in Biver's decoder, a "normalization amount" is subtracted from all survivor path (state) metrics by resetting the MSBs.

Allowable Subject Matter

10. Claims 1-7 would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. 112, second paragraph, set forth in this Office action.

11. Claim 26 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. Claims 13-25 are allowed.

Conclusion

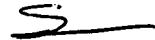
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2133

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (703) 305-9681. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.



Stephen M. Baker
Primary Examiner
Art Unit 2133

smb